IN THE CLAIMS

Please substitute claims 1-18 with the following:

1. (Previously Amended) A fractal structure comprising a plurality of regions, wherein a first of said plurality of regions has a first fractal structure grown from a start point of time of growth to a first point of time, the first fractal structure grown by:

identifying the lattice sites adjacent to one of the plurality of lattice sites;

for each lattice site adjacent to the one lattice site;

determining the probability that the lattice site is selected as part of the first fractal structure;

selecting another lattice site based on the probability that the lattice site is selected as part of the first fractal structure; and

adding the other lattice site to the first fractal structure; and

until the first point of time;

identifying the lattice sites adjacent to the other lattice site; and

for each lattice site adjacent to the other lattice site;

determining the probability that the lattice site is selected as part of the first fractal structure;

selecting the other lattice site based on the probability that the lattice site is selected as part of the first fractal structure; and

adding the other lattice site to the first fractal structure.

2. (Original) The fractal structure according to claim 1 wherein the nature of phase transition occurring in the fractal structure is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

3. (Original) The fractal structure according to claim 1 wherein electron-to-electron correlation of an interactive electron system is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

4. (Original) The fractal structure according to claim 1 wherein the magnetization curve of ferromagnetic phase transition is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

5. (Original) The fractal structure according to claim 1 wherein the nature of chaos appearing in the fractal structure is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

6. (Original) The fractal structure according to claim 1 wherein quantum chaos in the electron state is controlled by adjusting the ratio in volume of said plurality of regions relative to the entire volume of the fractal structure.

7. (Original) The fractal structure according to claim 1 wherein quantum chaos in the electron state is controlled by addition of a magnetic impurity.

8. (Original) The fractal structure according to claim 6 wherein quantum chaos in the electron state is controlled by addition of a magnetic impurity.

9. (Previously Amended) The fractal structure according to claim 1 wherein the first region forms a core; and wherein a second of the plurality of regions surrounds said first region and having a second fractal dimension lower than said first fractal dimension.

10. (Previously Amended) The fractal structure according to claim 9 wherein said first region and said second region exhibit a stellar shape as a whole.

11. (Original) The fractal structure according to claim 9 satisfying $D_{f1} \rangle 2.7$ and $D_{f2} \langle 2.3$ where D_{f1} is said fractal dimension and D_{f2} is said second fractal dimension.

12. (Original) The fractal structure according to claim 9 satisfying $2.7 \langle D_{f1} \leq 3$ and $1 \leq D_{f2} \langle 2.3$ where D_{f1} is said fractal dimension and D_{f2} is said second fractal dimension.

13. (Original) The fractal structure according to claim 9 satisfying $2.9 \leq D_{f1} \leq 3$ and $1 \leq D_{f2} < 2.3$ where D_{f1} is said fractal dimension and D_{f2} is said second fractal dimension.

14. (Previously Amended) A method of forming a fractal structure having a plurality of regions, wherein a first of the plurality of regions comprises a plurality of lattice sites in a fractal dimension, the method comprising the steps of:

identifying the lattice sites adjacent to one of the plurality of lattice sites;

for each lattice site adjacent to the one lattice site;

determining the probability that the lattice site is selected as part of the first fractal structure;

selecting another lattice site based on the probability that the lattice site is selected as part of the first fractal structure; and

adding the other lattice site to the first fractal structure; and

until the first point of time;

identifying the lattice sites adjacent to the other lattice site; and

for each lattice site adjacent to the other lattice site;

determining the probability that the lattice site is selected as part of the first fractal structure;

selecting the other lattice site based on the probability that the lattice site is selected as part of the first fractal structure; and

adding the other lattice site to the first fractal structure.

15. (Original) The method of forming a fractal structure according to claim 14 wherein there are used growth conditions ensuring the first fractal dimension to be made from the growth start point of time until a first point of time, and growth conditions ensuring a second fractal dimension lower than the first fractal dimension to be made from the first point of time to a second point of time.

16. (Original) The method of forming a fractal structure according to claim 15 satisfying $D_{f1} > 2.7$ and $D_{f2} < 2.3$ where D_{f1} is said fractal dimension and D_{f2} is said second fractal dimension.

17. (Original) The method of forming a fractal structure according to claim 15 satisfying $2.7 < D_{f1} \leq 3$ and $1 \leq D_{f2} < 2.3$ where D_{f1} is said fractal dimension and D_{f2} is said second fractal dimension.

18. (Original) The method of forming a fractal structure according to claim 15 satisfying $2.9 \leqq D_{f1} \leqq 3$ and $1 \leqq D_{f2} < 2.3$ where D_{f1} is said fractal dimension and D_{f2} is said second fractal dimension.